

Southern Pacific Railroad Natron Cutoff, Cruzatte Tank **HAER No. OR-96**
Milepost 545.4
McCredie Springs Vicinity
Lane County
Oregon

HAER
ORE
20-MCSP,
2-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
San Francisco, California

HISTORIC AMERICAN ENGINEERING RECORD

SOUTHERN PACIFIC RAILROAD NATRON CUTOFF, CRUZATTE TANK

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Location: Milepost 545.4, Cruzatte, Lane County, Oregon.
UTM: 10-567362-4830230
Quad: Diamond Peak, Oreg., 7.5', Provisional Edition 1986

Date of Construction: Ca. 1927.

Engineer: Southern Pacific Railroad Engineering Department.

Present Owner: Union Pacific Railroad, 1416 Dodge Street, Omaha NE.

Present Use: Abandoned.

Significance:

The Southern Pacific Railroad Cascade Route, built as the Natron Cutoff between Black Butte, California and Natron, Oregon was one of a series of major rebuildings and realignments of the original Central Pacific Railroad. Begun in 1905 under railroad magnate E.H. Harriman to replace the original Central Pacific route over the Siskiyou Mountains into Oregon, the Natron Cutoff had to overcome both natural and political obstacles. Stalled by government anti-trust lawsuits against Harriman, by World War I and the ensuing federal takeover of the nation's railroads, the Natron Cutoff finally overcame the rugged Cascade Mountains of Oregon to reach completion in 1927, at an ultimate cost of nearly \$40 million. For the purpose of the current project, the Natron Cutoff was found likely to be eligible for the National Register of Historic Places at the state level of significance under Criterion A for its significance in engineering, transportation history, and the economic history of central Oregon, and in the development of the West, and under criterion B for its association with E.H. Harriman. The Natron Cutoff's period of significance is 1905 to 1945, from the beginning of construction in 1905, through the years of its role in the economic development of the central Oregon, to the conclusion of the railroad's achievements in World War II. Built in ca. 1927, Cruzatte Tank is a contributive element of this property.

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I. DESCRIPTION

Cruzatte Tank is a Southern Pacific Lines Common Standard 50,000-gallon wooden water tank. The tub is built of first-quality clear redwood, and the vertical staves are fastened with turnhuckled steel hoops. The twelve-sided roof is built of tongue-and-groove roofing carried on 2x6 rafters. The tub rests on 4x12 joists, with the joists carried on a framework of 10x16 and 12x16 timbers. This whole platform is elevated on a cross-braced frame using 10x10 posts set on concrete piers. The tank is located on a slope above Cruzatte Siding at milepost 545.4.

II. HISTORICAL INFORMATION

Cruzatte Tank was likely one of the final elements built by contractors, Henry & McFee in their work on the Natron Cutoff between Black Butte, California and Natron, Oregon. Southern Pacific began the project in 1905, only to have it stalled in 1911 by federal anti-trust litigation that had begun a few years before. [For a full history of this line and of this undertaking, see the documentation set for the Southern Pacific Railroad Natron Cutoff (Southern Pacific Natron Extension) (Southern Pacific Cascade Route), HAER No. CA-217.] After successfully fending off the federal suit that would have caused it to divest itself of all former Central Pacific properties including the Natron Cutoff, and after resuming control of its properties following the nationalization of railroads during World War I, Southern Pacific resumed construction on the remaining 110-mile gap in 1923.

Southern Pacific let the grading contracts between September 1, 1923 and April 9, 1924, distributing the work among six firms: John Hampshire would be responsible for 36 miles; Utah Construction Company of Ogden for 36.7 miles; Stewart & Welch of San Francisco and Seattle for 14.6 miles, including the Summit Tunnel; Ericson Peterson & Grier Company for 9.7 miles; Henry & McFee for 5.3 miles, the aggregate length of the tunnels and approaches; and Kelly & Sullivan for 5.4 miles. The difficulties facing tunnel-builders Henry & McFee were typical of those on the north end of the project.

The forty-three miles from Oakridge to the Summit comprised mountainous, heavy timber country, requiring almost continuous side-hill grading and extensive tunneling. Descending from the Summit Tunnel (HAER OR-92) the line would follow the south side of Salt Creek Canyon for nineteen miles until reaching the crest of Cougar Ridge, where it would make a 200° turn--much of which would be inside a 2,205-foot tunnel. Backtracking along the same ridge but at a lower elevation for eight miles the line would then make another sharp curve, crossing Salt Creek on a seventy foot-high, 515 foot-long steel viaduct to resume its progress north toward Oakridge. The sidehill construction was to prove difficult. As the graders pushed forward, unstable slopes forced line revisions and required the substitution of one 2,095-foot tunnel in place of three shorter tunnels originally planned at that location. Too, the absence of roads in the area meant that the contractors would have to build their own on which to bring up equipment.

In late October 1924 John G. McFee reported that his firm would be watching the mountain weather closely. Thirty more days of good weather would give the contractors a head start on their tunnel work and would enable them to continue work throughout the coming winter. Their work was no small task: well up into the mountains on the north

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side of the summit, they faced drilling seventeen tunnels in a stretch of sixteen miles. What McFee needed was enough good weather to allow the grading crews of Kelly and Sullivan to complete *their* work so that the tunnelers could bring up their equipment and supplies. This work had proceeded somewhat more slowly than anticipated due to dry weather and fire danger: much of the brush had to be cleared by burning, and this had to be restricted to protect the timber. McFee anticipated employing nine hundred men on tunnel work and another three hundred on outside work. He very much wanted to have his crews underground before bad weather set in, which would allow them to be far ahead of estimates by Spring 1925. The longest tunnel facing McFee's forces would be the 3,655-foot Summit Tunnel, with another at 2,400 feet and yet another at 2,100 feet, and the remainder ranging down to a few hundred feet each. Geologic conditions offered both hindrances and help: the rock to be tunneled was extremely hard, but this would also reduce the need for timbering the bores. McFee had six steam shovels at work already, and his crews had spent the summer building wagon roads and camps in preparation for the tunnel work. McFee expected to absorb 500-600 men employed by Kelly and Sullivan in clearing the right-of-way to carry out grading work.

By early December 1924 McFee's crews were experiencing severe weather in the Cascades, but were still rushing their work and expected to continue throughout the winter as McFee had said. By this time approximately 44 miles of railroad had been completed between Kirk and Oakridge, thirty-seven miles of which were from Kirk to Skookum, and the remaining seven miles from Oakridge to the end of the rail construction. Trains were operating on both sections of road as far as the rails had been laid. A sixty-five mile gap remained, though grading work was nearly completed from Skookum to the Summit helper station, a distance of 31 miles, and schedules called for track laying and ballasting to start on this stretch in early Spring 1925. A workers' strike in late 1924 had not seriously hampered clearing the line. During the latter part of the summer and fall, the contractors had an average of 3,000 men employed in clearing right-of-way, grading, tunneling and track laying on the north end of the line. Because of excessive costs and difficulty of hauling, the contractors had established a number of small sawmills at convenient points in the forest adjacent to the groups of tunnels to provide construction timber for the tunnels.

Henry & McFee completed the Summit Tunnel in mid-1925 and continued their construction work as the line pushed its way along the steep slopes above Salt Creek. In 1927 they completed Tunnel 5 and its attendant mudshed (HAER No. OR-93) just west of Cruzatte Tank--and their work--in 1927 even as Utah Construction Company completed the line revision in Northern California that marked the final completion of the Natron Cutoff. Cruzatte Tank, then, was likely built ca. 1927 as Henry & McFee completed their work at the nearby tunnel. The tank, elevated above the siding, never had a spout. Instead, water was piped from the tank to water "plugs" at each end of Cruzatte Siding, from which steam locomotives could refill their tenders. The tank served in this capacity until the end of the use of steam locomotives on the Southern Pacific in about 1957. It has since fallen into disuse, and remains as a rare survivor of its type.

III. SOURCES

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IV. PROJECT INFORMATION

As a result of the 1996 merger of the Union Pacific and Southern Pacific Railroads, a federal undertaking under the jurisdiction of the Surface Transportation Board of the U.S. Department of Transportation, and in order to accommodate freight trains utilizing longer and taller cars and loads--tri-level auto rack cars and cars carrying double-stacked containers--the Union Pacific will need to increase tunnel clearances on the former Southern Pacific Natron Cutoff. The tunnels, built between 1905 and 1927, are contributing elements of the National Register-eligible Southern Pacific Cascade Route Tunnels Historic District. The railroad has laser-measured all tunnels and will determine clearance needs on a tunnel-by-tunnel basis. Some, because of curved alignment, will require interior work to allow for longer cars such as tri-level auto rack cars; others will require both interior and portal work to provide sufficient vertical clearance for "double-stack" container cars. The latter work may impact the character-defining tunnel portals if crown mining of the tunnels (as opposed to lowering the tunnel floors) is selected. Inasmuch as this would cause an adverse effect to the tunnels, Union Pacific, in consultation with the Oregon SHPO, has elected to record the tunnels for the Historic American Engineering Record. A field review with Oregon SHPO staff resulted in guidance to document representative tunnels from the early and late construction periods. Documentation was carried out by P.S. Preservation Services, John Snyder Field Director and Historian, and Ed Andersen, Photographer. Photos were made in November 1997, and research was carried in June 1997, and from November 1997 through April 1998. While not subject to effects from this undertaking, the Cruzatte Tank was recorded as a rare and increasingly ephemeral surviving representative of a Southern Pacific Common Standard 50,000 Gallon Wooden Water Tank, and as a contributor to the Southern Pacific Natron Cutoff.